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M. Weiß / M. Braunschweig

Storage of spring wire characteristics in a SQL - Database with ASP.NET – Webinterface

Abstract

The precise knowledge of the material behavior of spring wire is very important for the determination of spring dimensions and spring production.
Within the scope of a research project, extensive measurements for the determination of spring wire properties relevant for operation and production (modulus of elastic and shear modulus) were carried out. Besides calculated values, spring characteristics (stress- deformation curves) were stored.
The intention for the development of a database to store the measurement results is to provide the properties and characteristics (curves) accessibly over the internet for companies involved in the project.

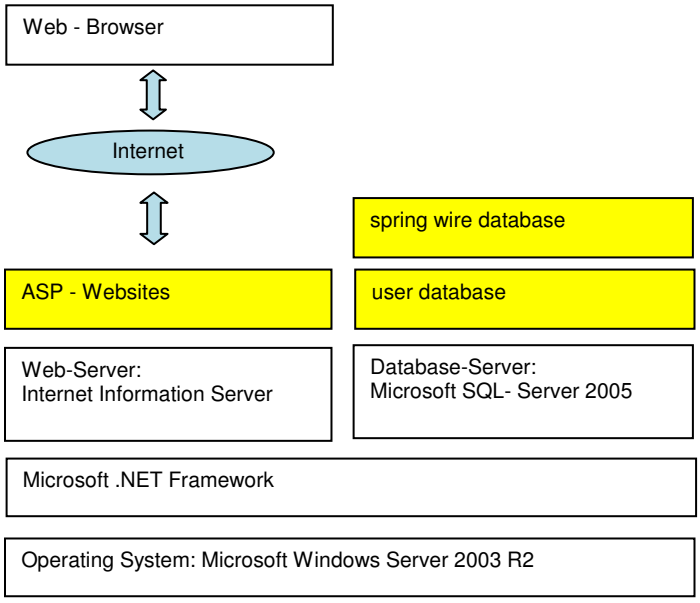

Figure 1: Softwarecomponents required for the SQL-Database with Web-Interface

The SQL-Server runs on a Windows Server. The spring wire database and the user database for user administration are stored on the SQL-Server (Fig. 1).

The websites are developed with ASP.NET 2.0. For the client there are no special requirements and no special software has to be installed. The only requirement is a Web-Browser.

In the spring wire database the parameters of the wire and of the wire pretreatment are stored as well as the complete stress-deformation characteristics and the first derivation of these characteristics (gradient of modulus of elastic and gradient of shear modulus). Data are stored for torsional tests, tensile tests, and bending tests. The stored characteristics are made available to users over a Webinterface (Fig. 2). A new feature is the capability to download the complete measuring data as a text file over the internet.

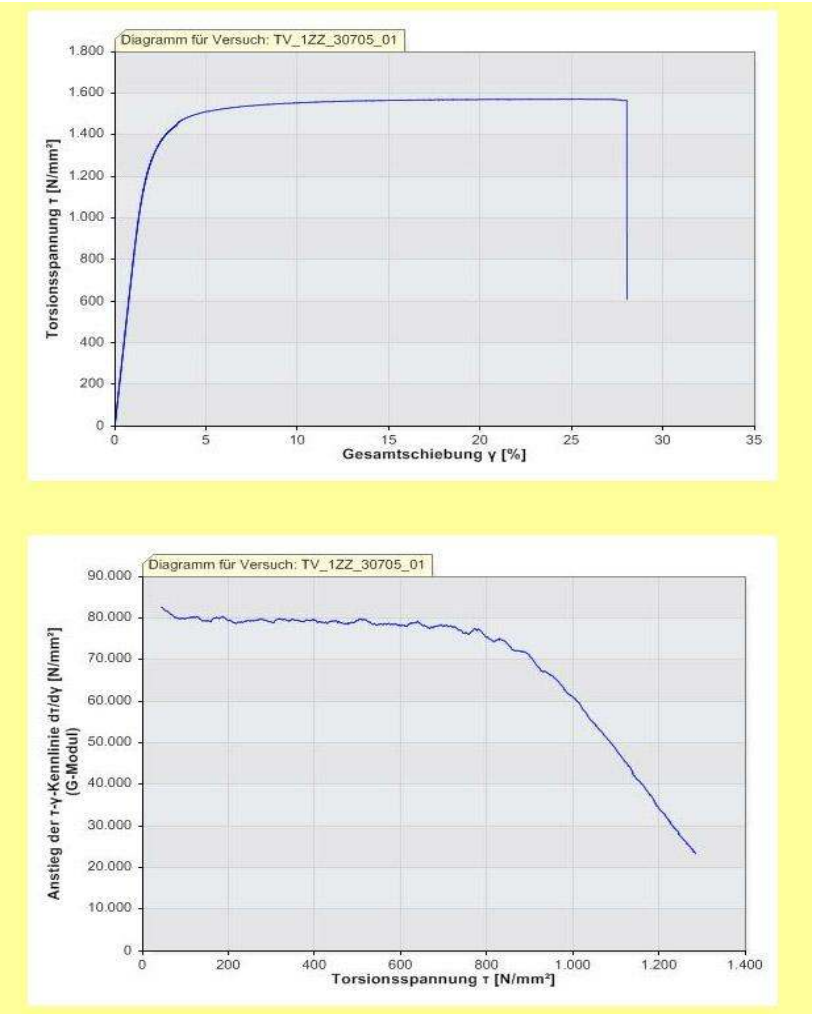

Fig. 2: Characteristics for torsional tests

The result of the introduced work is a first spring wire database with special material properties and characteristics that is available over the internet. Further works arise from the requirements of the users to the actual use of the data.

References:

[1] Ermittlung von funktions- und fertigungsrelevanten Federdrahtkennwerten (E- und G-Modul), Abschlussbericht zum AiF-Projekt 14306BR, TU Ilmenau , 2007

Authors:

Univ.-Prof. Dr.-Ing. habil. Mathias Weiß
Dr.-Ing. Marion Braunschweig
TU Ilmenau, PF 10 05 65
98684 Ilmenau
Phone: +49 3677 69 2467
Fax: +49 3677 69 1823
E-mail: marion.braunschweig@tu-ilmenau.de